

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (withdrawn): A composition for the co-delivery to a cell of a nucleic acid and an assister protein comprising vesicles formed of amphiphilic components, wherein the nucleic acid operatively encodes an antigenic protein or portion thereof which shares at least one epitope with the assister protein, the composition comprising said nucleic acid and said assister protein associated with the same vesicles as one another.
2. (withdrawn): A composition according to claim 1 wherein the vesicles are liposomes formed from liposome forming materials and said nucleic acid and said assister protein are associated with the liposomes.
3. (withdrawn): A composition according to claim 2 in which the nucleic acid is entrapped in the intravesicular space of the liposome.
4. (withdrawn): A composition according to claim 2 in which the assister protein is accessible at the outer surface of the liposomes.

5. (withdrawn): A composition according to claim 1 in which the amphiphilic components include at least one cationically charged component in an amount such that the vesicles have an overall positive charge.

6. (withdrawn): A composition according to claim 5 in which the cationic component is selected from 1,2-bis(oleoyloxy)-3-(trimethylammonio)propane (DOTAP), 1,2-bis(hexadecyloxy)-3-trimethylaminopropane (BisHOP), β [1-(2,3-dioleyloxy)propyl]-N,N,N-triethylammoniumchloride (DOTMA) and 3 β -(N,N-dimethylaminoethane)carbamylcholesterol (DC-CHOL).

7. (withdrawn): A composition according to claim 1, in which the nucleic acid comprises more than one molecule each of which encodes a different antigenic protein, and in which the assister protein includes corresponding proteins sharing epitopes with each such antigenic protein.

8. (withdrawn): A composition according to claim 7, in which the nucleic acid molecules are associated with the same vesicle.

9. (withdrawn): A composition according to claim 1, in which the antigenic protein and the assister protein are derived from a virus, preferably influenza.

10. (withdrawn): A composition according to claim 1 in which the nucleic acid is DNA, preferably plasmid DNA.

11. (withdrawn): A composition according to claim 1 which is a vaccine.

12. (withdrawn): A composition according to claim 11 adapted for subcutaneous, intramuscular, intravenous, intradermal, nasal, oral, mucosal or pulmonary administration.

13. (currently amended): A method of generating an immune response in an animal a mammal by administering to the animal mammal a composition according to claim 1 for the co-delivery to a cell of a nucleic acid and an assister protein comprising vesicles formed of amphiphilic components, wherein the nucleic acid operatively encodes an antigenic protein or portion thereof which shares at least one epitope with the assister protein, the composition comprising said nucleic acid and said assister protein associated with the same vesicles as one another, wherein

the antigenic protein and the assister protein are derived from an infectious microorganism;

the vesicles are liposomes formed from liposome forming materials;
said nucleic acid and said assister protein are associated with the liposomes;
the nucleic acid is entrapped in the intravesicular space of the liposome; and

the nucleic acid and the assister protein are present in a weight ratio in the range of 1000:1 to 1:1.

14. (original): A method according to claim 13 in which the immune response comprises an antibody response specific to the antigenic protein and/or assister protein.

15. (previously presented): A method according to claim 13 in which the immune response involves stimulation of cytotoxic T-lymphocytes.

16. (currently amended): A method according to claim 13 which confers immunity against infection by an infectious agent, preferably a virus.

17. (withdrawn): A process for forming a liposomal composition comprising the steps

(a) providing an aqueous suspension of small unilamellar (SUVs) formed of liposome forming materials;

(b) contacting the aqueous suspension of SUVs with nucleic acid which operatively encodes an antigenic protein to form an SUV-nucleic acid suspension;

(c) dehydrating the SUV-nucleic acid suspension to provide a dehydrated mixture; and

(d) rehydrating the dehydrated mixture in an aqueous resuspending medium to form a suspension of nucleic acid containing liposomes,

including the step of introducing an assister protein whereby the nucleic acid containing liposomes are associated with said assister protein.

18. (withdrawn): A process according to claim 17 in which the assister protein is contacted with the aqueous suspension of SUV's before, during or after step b and before step c.

19. (withdrawn): A process according to claim 17 in which the assister protein is present in the resuspending medium.

20. (withdrawn): A process according to claim 17 in which the liposome forming materials comprise at least one phospholipid and at least one sterol.

21. (withdrawn): A process according to claim 20 in which the materials comprise at least one cationic compound and the liposomes have an overall cationic charge.

22. (withdrawn): A process according to claim 17 wherein the weight ratio of nucleic acid to liposome forming materials is in the range 1:100 to 1:1000, preferably 1:100 to 1:300.

23. (withdrawn): A process according to claim 17 wherein the weight ratio of nucleic acid to assister protein is in the range 1000:1 to 1:1, preferably 30:1 to 5:1.

24. (withdrawn): A process according to claim 17 wherein the dehydration is by freeze-drying.

25. (new): A method according to claim 14 wherein the antigenic protein is derived from Hepatitis virus.